DOCUMENT RESUME

ED 252 711 CE 040 515

AUTHOR Porreca, Anthony G.; Siferd, Larry G.
TITLE Paradigms in Vocational Education Literature: A Classification by Practices and Foundations. Status Report.
PUB DATE 3 Dec 84
NOTE 52p.; Paper presented at the American Vocational Association Convention (New Orleans, LA, December 3, 1984). Prepared with the assistance of Russell Evans, Betsy Kempf, Linda Liest, and Charles Walker.
AVAILABLE FROM Dept. of Educational Policy and Leadership, 121 Ramseyer Hall, Ohio State University, Columbus, OH 43210-1177 ($15.00; 10 or more--$10.00 each).
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC03 Plus Postage.
DESCRIPTORS Adult Vocational Education; *Educational Practices; *Educational Research; Evaluation Criteria; *Foundations of Education; *Measurement Techniques; *Models; Postsecondary Education; Secondary Education; *Vocational Education

ABSTRACT

This document reports on the initial phases of an ongoing research project designed to develop a classification of literature citations that would indicate the subject-matter expertise needed by those who study, teach, conduct research, and make decisions in the field of study known as vocational education. A three-dimensional matrix was proposed, breadth of which was indicated through the interaction of practices and foundations and depth of which reflected the prioritized listings of paradigms at each intersection point. Comments about and reactions to the initial matrix were received from 140 vocational leaders across the United States and were used in designing a final matrix or classification of literature entitled "A Classification of Paradigms in Vocational Education Literature by Practices and Foundations." Definitions were constructed for the five practices (aims and policy development; administration, supervision, and organization; curriculum development and evaluation; instruction, guidance, and tests and measurements; research) and the six foundations (historical, philosophical, psychological, societal, economic, scientific). Criteria for selection of literature citation paradigms were identified, and an identification and evaluation instrument was developed. The steps in manually and electronically searching vocational education literature and subsequently classifying the literature citations into practices and foundations were also identified. (YLB)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED252711

Status Report on

PARADIGMS IN VOCATIONAL EDUCATION LITERATURE: A CLASSIFICATION BY PRACTICES AND FOUNDATIONS

by

Dr. Anthony G. Porreca, Professor

and

Larry G. Siferd, Ph.D. Candidate

Prepared With The Assistance Of
The Following Graduate Students:

Russell Evans
Betsy Kempf
Linda Leist
Charles Walker

Department of Educational Policy and Leadership

College of Education

The Ohio State University

Presented at the
Special Interest Group: History and Philosophy
of Vocational Education
American Vocational Association Annual Convention
New Orleans, LA
December 3, 1984
Copyright, 1984
All Rights Reserved

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
This document has been reproduced as received from the person or organization originating it.
Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
A Porreca
L Siferd
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

CE040515

TABLE OF CONTENTS

Page

List of Figures iv

Preface v

I. Introduction 1

Conceptualization of Idea 1
Initial Proposal 2
Purpose 3
Research Process 4

II. Importance of Paradigms 6

Meaning of the Term Paradigm 6
Need for a Classification by Paradigm 6
Uses of Results 9

III. Development of Initial Matrix or Classification by Practices in and Foundations of Vocational Education Literature 11

Adaptation of Broudy's Concept 11
Revised Matrix 11
Results of Initial Query 15

IV. Development of Final Matrix or Classification by Practices in and Foundations of Vocational Education Literature 16

Synthesis of Reactions from Query 16
Definitions of Practices and Foundations 19
Intersection of Cells 21

V. Criteria for Selection of Literature Citation Paradigms 22

Trustworthiness as a Tool 25
Concept of Relevance 27
Identification and Evaluation Instrument 27

VI. Literature Search Strategies 30

Manual Search Strategy 30
Electronic Search Strategy 33

TABLE OF CONTENTS (continued)

Page

Appendix A -- Organization of Topics and Materials in Philosophy of Education 36

Appendix B -- Listing of Electronic Data Bases 38

Selected References 41

LIST OF FIGURES

Figure		Page
1.	Illustration of three dimensional matrix	8
2.	Original matrix that was submitted with research proposal	12
3.	Revised matrix based on Professor Broudy's comments	13
4.	Revised matrix based on vocational educator's comments	17
5.	A three-step process of judgments to determine and to prioritize paradigms in vocational education literature	23
6.	Naturalistic terms form the basis to identify and to evaluate paradigms in the literature of vocational education	26
7.	A flowchart of the manual process used to search literature	32
8.	A flowchart of the electronic process used to search literature	35

PREFACE

Vocational education, to exist as a field of study, should identify literature that focuses on the practices in and foundations of vocational education. When this occurs, a body of vocational education knowledge emerges and presents a structure to facilitate study, teaching, research, and decision making in vocational education. Such an endeavor should assist in promoting a renaissance throughout the field of study known as vocational education.

This document is a status report on the initial phases of what is perceived as an ongoing research project, which was initiated during the spring of this year at The Ohio State University. The researchers recognize that additional work is needed to validate the evaluation tool and search strategies and that additional financial and human resources are needed to complete such a research project.

The overwhelming interest and desire to pursue this research may inspire you, as it did us. Human resources are needed to make qualitative judgments with this structured approach to vocational education literature.

PARADIGMS IN VOCATIONAL EDUCATION LITERATURE: A CLASSIFICATION BY PRACTICES AND FOUNDATIONS

Section I: Introduction

Conceptualization of Idea

The idea behind organizing educational literature in a classification or matrix is not new, for philosophers in the education profession have recognized the value of such a concept for several decades. Professor Henry S. Broudy, Professor Emeritus of Education, University of Illinois, addressed this issue as early as 1954 when he sought to furnish a guide to the philosophical treatment of educational problems.

In the past, Broudy (1967) has argued that for a field of study (such as vocational education) to justify an autonomous existence, it must have a set of special problems that direct and focus its inquiries.... For a field of study to be professionalized, it must use and organize facts and principles taken from diverse academic disciplines, e.g., chemistry, physics, and psychology, around the demands of its own problems.... Finally, if a field of study is to be professional, it has to utilize practice in order to illuminate theory and to use theory as a guide to practice.

In the autumn of 1983, while a distinguished visiting professor at The Ohio State University, Broudy postulated similar themes as he interacted with several faculty members and graduate students. The

researchers (Porreca/Siferd) of this study realized the potential implications of Dr. Broudy's ideas for vocational education and arranged to meet with Broudy to explore the topic in greater depth.

At this and subsequent meetings, Professor Broudy discussed with the researchers a schema he designed as a tool for the development of a professional curriculum based on an organization of topics and materials. Broudy's schema is shown in Appendix A. As he explained, the literature organized by the schema represents the knowledge needed by those who study, teach, and conduct research in the field of study known as philosophy of education.

The researchers recognized the need for a similar schema and literature organization in the field of study known as vocational education. Upon learning about the availability of research funds from OSU's College of Education, Research and Development Office, an initial proposal for the creation of such a schema was written.

Initial Proposal

On December 15, 1983, Dr. Porreca submitted a research proposal entitled "An Organization (By Practices and Origins) of Selected Sources of Reference for Vocational Education" to the College of Education, Research and Development Office, The Ohio State University. Seed money in the amount of $500 was requested in the proposal and granted by the office. Thus the research process was initiated with these funds, which were sufficient for the development of an intricate research strategy that has, to an extent, been implemented. Because of the ongoing nature of this study, money for its continuation and refinement is expected to become available in the future.

Purpose

The purpose of this research is to identify and ultimately exhibit selected sources of reference (or literature citations) for vocational education. As a result of this project, the organization of literature citations will indicate the subject-matter expertise needed by those who study, teach, conduct research, and make decisions in the field of study known as vocational education.

Undergraduate and graduate vocational education will be enhanced, for vocational education literature currently exists in an unorganized fashion. In addition, mere knowledge of legislation, in many instances, serves as a measure of professional preparation in vocational education. As a result, universal knowledge about vocational education is, in fact, limited. Identifying a body of knowledge known as vocational education will also complement a philosophical base for vocational education.

Certain assumptions are made. First, a body of literature in vocational education exists to describe all facets of vocational education. Second, a body of literature has given those educated in vocational education a background to make informed decisions concerning vocational education. Third, various vocational educators and others have learned about vocational education in varying degrees of breadth and depth. Finally, although a body of vocational education literature has been viewed in isolated topics (such as legislation, curriculum, and practices), there has been no overall schema to account for the interrelated components of vocational education.

Research Process

The following procedures have been/will be utilized in the development of a matrix for paradigms in vocational education literature and for the identification and placement of these paradigms within the matrix:

1. Development of expertise. The researchers enhanced their understanding of Professor Broudy's work through interaction with him. They also utilized other sources of information regarding the development of matrices and organizations of literature.

2. Refinement of schema. From the start of the project, the researchers realized that Broudy's work (Appendix A) would be modified for current research purposes in vocational education. The process of refining his original schema is detailed in Section III.

3. Validation of schema. To ensure input from a variety of sources and to confirm or deny the appropriateness of their modifications to Broudy's schema, the researchers utilized a panel of experts to validate and provide reactions to the matrix that was ultimately developed. The validation process is thoroughly explained in Section III.

4. Review of literature. On-line computer services using facilities at The Ohio State University were used to collect and summarize the literature of vocational education contained in the Educational Resources Information Center (ERIC) data base. These searches are discussed in Section VI.

5. Organization of literature. The material generated via the computerized searches just mentioned was organized into the specific cells contained in the validated schema. This process is described in Section IV.

6. Selection of paradigms. The importance of paradigms is explained in Section II, and the criteria for their selection are addressed in Section V.

7. Completion of project. Upon the completion of this research, paradigms in the literature of vocational education will be grouped according to cells A1 through E6 on the final matrix. This product will outline the body of knowledge needed by those who seek professional competence in vocational education. It should also encourage further research to analyze course content that contains topics such as philosophy, principles, and evolution of vocational education.

The above seven developmental processes serve as overall procedures for the study. Also in this research, a naturalistic approach is an acceptable process for investigating the body of knowledge that makes up vocational education. The naturalistic approach aims at developing knowledge by focusing on the differences between objects as much as on the similarities.

This section discussed the conceptualization of the idea, the formation of the initial proposal, the purpose, and the development of the research process. The following sections address the importance of paradigms, the development of the matrices, the criteria for selection of literature, and literature search strategies.

Section II: Importance of Paradigms

Meaning of the Term "Paradigm"

The term paradigm has at least two distinct uses. A dictionary meaning describes paradigm as an ideal or model example. Perhaps the term "classic example" best describes the use of the term paradigm by dictionary standards. Two types of paradigms exist for research in education (Guba and Lincoln). Rationalistic (conventional) paradigms assume that reality is separable and fragmentable into independently manipulative parts (commonly called variables). Thus individual variables can be identified and "singled out." Naturalistic paradigms, on the other hand, assume that there are multiple realities; thus, inquiry will diverge rather than converge as more and more is known; all "parts" of reality are interrelated so that inquiry into one part influences another part (Guba, 1981).

In this research, the matrix identified in Section IV (Figure 4) is a classification or structure to view vocational education literature, whereas the literature citations, in prioritized order, are paradigms as in a dictionary definition of the term paradigm.

Need for a Classification by Paradigm

Literature, including research, has a significant impact on the direction of fields of study. This is true for education in general as well as any dynamic process in society. Thus vocational education is no exception.

Body of knowledge. A useful purpose of viewing vocational education through the literature is to establish a cohesive body of knowledge that best describes vocational education. The literature of vocational education, which serves as vocational education's body of knowledge, must be available to all who make decisions concerning the direction of vocational education. This applies to the novice, the persons who are in control of the power structure for decision making, the teacher and the learner in vocational education, and those who evaluate and judge vocational education.

Systematic way. The current state of the art presents vocational education's literature in a haphazard fashion. No systematic way has been identified that permits an organized view of vocational education. Thus vocational education literature should be harnessed in such a fashion as to permit those who seek simply an overview of vocational education literature ready access to it. In like fashion, those who desire an in-depth understanding should have access to vocational education literature that is organized by breadth and, more importantly, by depth.

Organizing vocational education literature by breadth can be defined as a classification of literature citations according to practices in and foundations of vocational education. This type of classification is a two-dimensional (practices and foundations) cell matrix. A third dimension also exists for depth of literature at each point of intersection (cell) of a practice and a foundation. Organizing by depth can be defined as a list of literature citations arranged in a prioritized order that appears at each intersection (cell) of a practice and foundation. (Figure 1.)

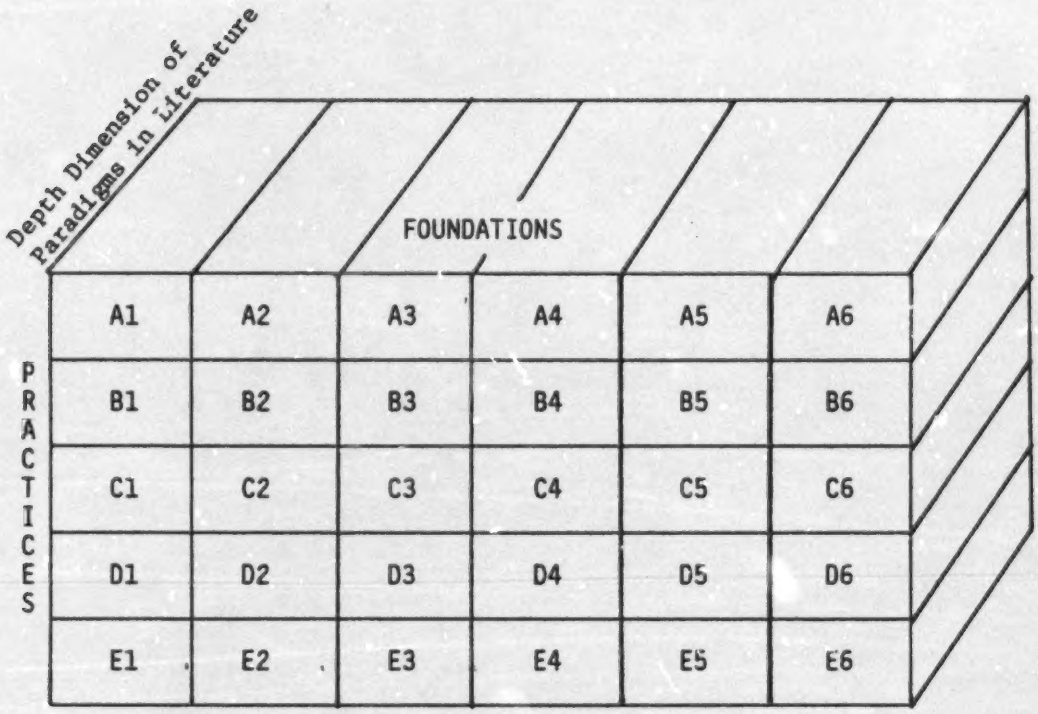

Figure 1. Illustration of three dimensional matrix. Breadth is indicated through the interaction of practices and foundations and depth reflects the prioritized listing of paradigms at each intersection point.

Vocational education, as mentioned earlier, is viewed as a body of knowledge consisting of practices and foundations. A third dimension also exists in the depth of the literature citations in each cell. Such a matrix is a view of vocational education based on a structure that identifies the body of knowledge called vocational education.

When used to refer to a model or classic example, a paradigm in the literature makes a contribution to vocational education's body of knowledge that is exemplary. In the dictionary definition of paradigm, each literature citation is evaluated to determine its rank among other citations in the literature. First, the literature citation must be judged for its contribution to the literature of vocational education. Second, the literature citation must be placed in a cell as a practice and foundation. Third, the literature citation must be ranked among others in the designated cell so that a prioritized order of paradigms emerges.

The need for qualitative and quantitative research in vocational education is apparent. Such research, however, has taken an unsystematic approach to problems without much success in resolving them. Proliferation of literature of all kinds has had little effect in establishing vocational education as an acceptable area of study. Yet vocational educators have great expectations for additional research endeavors and literature productivity.

Uses of Results

A new view of the organization of the body of knowledge known as vocational education will create new areas for researchers and

curriculum builders, as well as a framework for philosophical inquiry. In the education of vocational teachers and vocational teacher educators, a matrix of literature will provide for a systematic inquiry approach. Graduate students who desire to do needed research will be able to review areas that lack substantial or current research.

Researchers at all levels, such as undergraduate, graduate, state, national, and private agency, can make use of the matrix. Specifically, unique literature citations in each cell as well as those that overlap will show relationships among events and data.

Classroom teachers, legislators, and the general public will be able to pursue knowledge about vocational education in a systematic way by referencing specific practices and foundations. The inquiry in which one wishes to engage will be available without needless replication of literature citations.

Section III: Development of Initial Matrix or Classification by Practices in and Foundations of Vocational Education Literature

Adaptation of Broudy's Concept

Just as Broudy's schema reflected the needs of educational philosphers, a schema for vocational education literature should reflect the needs of vocational educators. Thus revisions were made to Broudy's chart (Appendix A), and a first matrix was developed, which is shown as Figure 2. Based upon Broudy's recommendations, this matrix was revised and entitled "Taxonomy of Vocational Education: Paradigms in the Literature." It is shown as Figure 3.

Revised Matrix

The second matrix (Figure 3) organized the literature of vocational education into four practices and five theoretical foundations.

The four practices were nature, aims and policy; curriculum design and validation; organization, supervision, and administration; and teaching, learning, and evaluation.

The theoretical foundations were identified as historical aspects, philosophical aspects, psychological aspects, societal aspects, and religious aspects. Historical aspects was subdivided into industrial and communication technology; philosophical aspects

SOURCES OF REFERENCE FOR VOCATIONAL EDUCATION BY PRACTICES AND ORIGINS CHART[1]
by Porreca and Siferd

Origins of Vocational Education

	Historical Aspects	Philosophical Aspects	Psychological Aspects	Societal Aspects	Ethics, Value Theory	Religious Aspects
Nature, Aims, and Policy	A1	A2	A3	A4	A5	A6
Curriculum Design and Validation	B1	B2	B3	B4	B5	B6
Organization, Supervision, and Administration	C1	C2	C3	C4	C5	C6
Teaching, Learning, and Evaluation	D1	D2	D3	D4	D5	D6

NOTE: A1 through D6 identify cells that will list sources of reference.

[1]Adapted from Broudy, Harry S., and others. Philosophy of Education: An Organization of Topics and Selected Sources. (Urbana: University of Illinois Press, 1967.)

Figure 2. Original matrix that was submitted with research proposal.

Porreca/Siferd
The Ohio State University
Columbus, Ohio 43210
614/422-5431

TAXONOMY OF VOCATIONAL EDUCATION

Paradigms in the Literature

	Theoretical Foundations of Vocational Education				
Practices	Historical Aspects -Industrial Tech. -Communication Tech.	Philosophical Aspects -Ethics -Values -Aesthetics	Psychological Aspects	Societal Aspects -Economic -Institutional -Legislative	Religious Aspects
Nature, Aims, and Policy	A1	A2	A3	A4	A5
Curriculum Design and Validation	B1	B2	B3	B4	B5
Organization, Supervision, and Administration	C1	C2	C3	C4	C5
Teaching, Learning, and Evaluation	D1	D2	D3	D4	D5

A1 through D5 identify cells that will list sources of reference.

(NOTE: Adapted from Broudy, Harry S., and others. Philosophy of Education: An Organization of Topics and Selected Sources. Urbana: University of Illinois Press, 1967.)

Figure 3. Revised matrix based on Professor Broudy's comments.

was subdivided into ethics, values, and aesthetics; and societal aspects was subdivided into economic, institutional, and legislative aspects.

These practices and foundations intersect at the points or cells identified on the matrix as A1 through D5. Each practice is clearly coupled with a letter: (Nature, Aims, and Policy = A; Curriculum Design and Validation = B; Organization, Supervision, and Administration = C; and Teaching, Learning, and Evaluation = D). Each foundation, on the other hand, is consistently identified with a number: (Historical Aspects = 1; Philosophical Aspects = 2; Psychological Aspects = 3; Societal Aspects = 4; and Religious Aspects = 5). Thus any literature citation coded with the number "1" (for example) identifies any practice related to the Historical foundation of vocational education. Similarly, a literature citation coded with the letter "D" (for example) relates to any foundation related to the Teaching, Learning, and Evaluation practice.

This revised matrix was sent to approximately 200 vocational education leaders across the United States along with a request that they review and provide reactions to and comments about it. The names used for the mailing were selected by the researchers from the 1983 American Vocational Association Convention Directory and a listing of Omicron Tau Theta members. A preaddressed, stamped envelope was included with the matrix; the respondents were to make comments directly on the document and return it to the researchers in the appropriate envelope.

Results of Initial Query

Comments about and reactions to the initial matrix were received from 140 individuals, which is a response rate of approximately 70 percent. The responses were overwhelmingly positive and confirmed the researchers' opinion that there was a great need for an organization of paradigms in vocational education literature. Numerous concerns were voiced about the need for a theoretical foundation called religious aspects, and the consensus suggested that all subdivisions of theoretical foundations should be eliminated. Also, many respondents argued that a practice entitled research should be added to the taxonomy, and some people questioned the use of the terms taxonomy and paradigm in the title of the schema. The results of the initial query are synthesized in the following section.

Section IV: Development of Final Matrix or Classification by Practices in and Foundations of Vocational Education Literature

Synthesis of Reactions from Query

The responses received, as a result of the March 1 mailing, were helpful in designing a final matrix or classification of literature by practices in and foundations of vocational education. The final matrix is shown on the following page as Figure 4. This matrix continues the established procedure of consistently pairing each practice with a letter and each foundation with a number. This concept was thoroughly explained in Section III, underneath the side heading Creation of Revised Matrix.

The research group was expanded. Four additional vocational education graduate students who were keenly interested in this research joined Porreca and Siferd in conducting the study from this point. The research group synthesized the comments made by respondents; and, as the reader will see, several changes were made from the initial matrix.

First, because several respondents questioned the appropriateness of the term taxonomy, the title of the matrix was changed from "Taxonomy of Vocational Education: Paradigms in the Literature" to "A Classification of Paradigms in Vocational Education Literature by Practices and Foundations." The research group contends that the title is more descriptive of the purpose and intent of the matrix than was the initial title.

Anthony G. Porreca
Larry G. Siferd
The Ohio State University
June, 1984

A CLASSIFICATION OF PARADIGMS IN VOCATIONAL EDUCATION LITERATURE BY PRACTICES AND FOUNDATIONS

Practices	Foundations of Vocational Education					
	Historical	Philosophical	Psychological	Societal	Economic	Scientific
Aims and Policy Development	A1	A2	A3	A4	A5	A6
Administration, Supervision, and Organization	B1	B2	B3	B4	B5	B6
Curriculum Development and Evaluation	C1	C2	C3	C4	C5	C6
Instruction, Guidance, and Tests and Measurements	D1	D2	D3	D4	D5	D6
Research	E1	E2	E3	E4	E5	E6

1984 Copyright

Figure 4. Revised matrix based on vocational educators' comments.

Second, the word theoretical was dropped from the horizontal axis of the matrix causing those categories to be identified as "Foundations of Vocational Education." Again, the research group was guided by the suggestions of the respondents to the query. The respondents confirmed that what was cited as "Theoretical Foundations of Vocational Education" was, indeed, simply foundations of vocational education.

Third, two new foundations were added to the matrix, and an existing one was deleted. The additions were Economic and Scientific foundations while the deletion was the Religious category. The query revealed considerable doubt on the part of the respondents to the validity of a separate category devoted to religion. While they did not deny the importance of values generated as a result of religious foundations, many respondents recommended that such values would be better reflected as a subset of one of the foundations. Also revealed by the query was a consensus that the economic and scientific foundations of vocational education were not given enough emphasis in the initial matrix; thus, these categories were included in the final version (Figure 4). The research group also decided to eliminate all of the stated subdivisions from the foundation catagories and to delete the word aspects from each category. The final result is the six foundations of vocational education illustrated in the Figure 4 matrix.

Fourth, the practices were refined in accordance with specific recommendations by the respondents to the query. Thus Nature, Aims, and Policy became Aims and Policy Development; Curriculum Design and Validation became Curriculum Development and Evaluation;

Organization, Supervision and Administration became Administration, Supervision, and Organization; and Teaching, Learning, and Evaluation became Instruction, Guidance, and Tests and Measurements. Finally, the practice of Research was added to complete the matrix; and, for sequential order, the practice of Administration, Supervision, and Organization was transposed with Curriculum Development and Evaluation to promote continuity and a smooth flow of ideas within the classifications of practices, vertically shown on the matrix.

Definitions for Practices and Foundations

Armed with the results of the query and information gained through independent research and reading, the research group sought to formulate specific, concrete definitions for the identified practices in and foundations of vocational education, which theretofore had been only abstract concepts open to numerous interpretations. Two factors were of paramount concern in this endeavor: (1) the definitions should be specific enough to aid the users of the matrix, yet broad enough to encompass divergent paradigms in the literature; and (2) the definitions should facilitate the utilization of computer searches of appropriate data bases such as the ERIC system.

The following definitions were constructed for the practices in vocational education:

> The Aims and Policy Development category will contain literature citations that address the comprehensive characteristics, goals, and objectives of vocational education. Literature that addresses actual and proposed changes in the scope and direction of vocational education in America will be included.

The Administration, Supervision, and Organization category will contain literature citations that address financial and academic administration, supervision at all levels of instruction, and vocational education organization.

The Curriculum Development and Evaluation category will contain literature citations that address curriculum design, validation, and systematic procedures for curriculum building; thus this category will also include procedures for the evaluation of curriculum.

The Instruction, Guidance, and Tests and Measurements category will contain literature citations that address instruction from the point of view of the teacher and learner; guidance that includes career awareness, exploration, specialization, and training/development; and tests and measurements of all phases of instruction.

The Research category will contain literature citations that address research at all levels of vocational education practices, thus including aims and policy development; administration, supervision, and organization; curriculum development and evaluation; and instruction, guidance, and tests and measurements.

The following definitions were constructed for the foundations of vocational education:

The Historical category will contain literature citations that address the evolution of vocational education.

The Philosophical category will contain literature citations that address the metaphysical, epistemological, ethical, and aesthetic aspects of vocational education.

The Psychological category will contain literature citations that address the psychological aspects of vocational education and discuss the study of the nature of learning. Topics covered may include work from influential schools of thought and theories in psychology.

The Societal category will contain literature citations that address the influence of society's institutionalized units of control and non-institutionalized sectors on vocational education.

The Economic category will contain literature citations that address the interaction of the market and limited resources as these aspects relate to vocational education.

The Scientific category will contain literature citations that address the influence and use of science and technology in vocational education.

As indicated previously, these definitions were specifically designed to assist in manual and electronic searches of literature. Section VI, details how these demarcations can be utilized in manual and electronic searches of literature.

Intersection of Cells

Based upon the definitions just postulated for practices and foundations, each of the 30 cells in the matrix (A1 through E6) is designed to contain paradigms in the literature of vocational education that are specifically reflective of a given practice and foundation. For example, Cell A1 will hold literature citations, in prioritized order, that primarily address the practice of Aims and Policy Development in the context of a Historical foundation of vocational education. Similarly, Cell C5 would contain, in prioritized order, literature citations addressing the practice of Curriculum Development and Evaluation in the context of an Economic foundation of vocational education. Thus users of the matrix are quickly and easily able to locate specific literature citation paradigms by breadth and depth, which can serve as basic knowledge or as in-depth understanding.

Section V: Criteria for Selection of Literature Citation Paradigms

Each piece of literature in vocational education makes a contribution to a body of knowledge identified as vocational education. To what extent such a contribution is useful must be determined. Not only is the usefulness a factor, but the specific area in which such usefulness exists must also be considered. For example, a literature citation may be considered a paradigm in the literature, but in what way? Perhaps it is useful as a contribution to Aims (practice) and Historical (foundation). Thus criteria for the selection and organization of literature citation paradigms must make at least three judgments.

In the first judgment, the criteria must evaluate the literature citation as a paradigm in vocational education literature. In the second judgment, the criteria must determine at which intersection point (Practices and Foundations) the best fit for the literature citation exists. The third judgment that must be made is regarding the prioritization of the list of literature citations at each point of intersection. The Identification and Evaluation Instrument of Paradigms in Vocational Education Literature is shown as Figure 5.

The research about paradigms in vocational education literature, therefore, is a continuous process that builds on previous knowledge and subsequent contributions to the literature. An important note, however, must be made here. The present matrix (Figure 4) is a philosophical paradigm that is an unfolding concept and has unlimited potential.

IDENTIFICATION AND EVALUATION OF PARADIGMS IN VOCATIONAL EDUCATION LITERATURE

Evaluator's Code: _____
Date: _____
Paradigm? Yes___ No___

LITERATURE CITATION REFERENCE

INSTRUCTIONS

Three judgments are required to identify and evaluate paradigms in vocational education literature.

Judgment No. 1: After reading the literature cited above, judge it as to whether or not it is a paradigm. To do this, follow the flowchart below.

YOUR TRUSTWORTHINESS JUDGMENT NO. 1

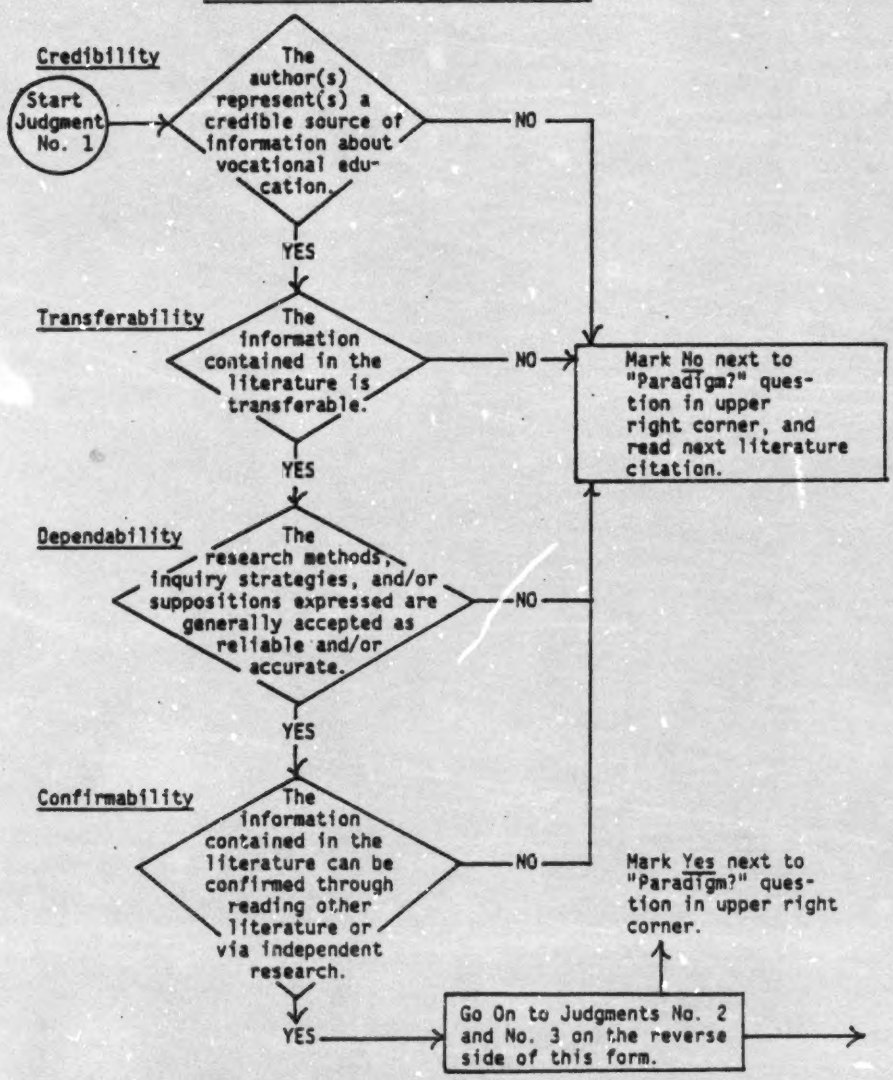
Credibility
Start Judgment No. 1
The author(s) represent(s) a credible source of information about vocational education.
NO
YES
Transferability
The information contained in the literature is transferable.
NO
YES
Dependability
The research methods, inquiry strategies, and/or suppositions expressed are generally accepted as reliable and/or accurate.
NO
YES
Confirmability
The information contained in the literature can be confirmed through reading other literature or via independent research.
NO
YES
Mark No next to "Paradigm?" question in upper right corner, and read next literature citation.
Mark Yes next to "Paradigm?" question in upper right corner.
Go On to Judgments No. 2 and No. 3 on the reverse side of this form.

Figure 5. A three-step process of judgments to determine and to prioritize paradigms in vocational education literature.

YOUR "BEST FIT" JUDGMENT NO. 2

Judgment No. 2: You have judged this citation as a paradigm in vocational education literature. Now decide the "best fit" by designating the Practice and Foundation cell in which this literature is best classified. You may rank the "best fit" as #1, second best as #2, and continue to classify in other cells if you wish; it is, however, not necessary to go beyond #1.

Practices: (Rank "best fit" as #1)		Foundations: (Rank "best fit" as #1)	
Aims and Policy Development	#	Historical	#
Administration, Supervision, and Organization	#	Philosophical	#
		Psychological	#
Curriculum Development and Evaluation	#	Societal	#
Instruction, Guidance and Tests and Measurements	#	Economic	#
		Scientific	#
Research	#		

YOUR PRIORITIZING LITERATURE JUDGMENT NO. 3

Judgment No. 3: Now that the citation is classified in the "best fit" cell, judge the importance of this literature. To do this, read the statements below, and check the categories in the right column.

The literature cited...	5	4	3	2	1	0
1. was authored by an expert in the field						
2. is germane to vocational education						
* 3. would be valued by other vocational educators						
* 4. is presented in a neutral fashion						
5. is frequently referenced in other literature						
6. does not relate to special interest groups only						
* 7. reports information applicable to comprehensive vocational education						
8. was sponsored/published by a reputable agency						
9. does not demonstrate prejudicial views						
10. is not sex stereotyped						
*11. can be consistently validated						
12. ranks in the top 5 in literature						
13. is an example of collective thought						
14. is of an objective nature						
15. is not a synthesis of writing and/or research						
*16. is generalizable to comprehensive vocational education						
17. is published in a refereed journal						
18. is a work which exemplifies excellence						
19. is not regionalistic						
20. is important to the general public						

5 Strongly Agree
4 Agree
3 Agree Somewhat
2 Disagree
1 Strongly Disagree
0 Not Applicable

TOTAL COMPOSITE SCORE OF JUDGMENT NO. 3 ___

GO ON TO NEXT LITERATURE CITATION

Figure 5 (continued)

As literature reports new dimensions of vocational education, the matrix becomes an expanded map of literature.

Trustworthiness as a Tool

As reported by Guba (1981), there are four basic concerns that involve the questions of trustworthiness. These are:

1. Truth value

   ...to establish "truth" of findings...

2. Applicability

   ... "applicability" in other contexts...

3. Consistency

   ...findings are to be "consistently" repeated if inquiry were replicated...

4. Neutrality

   ...findings are a function solely of respondents and conditions of inquiry and not biases...

Such terms are basic to rationalistic (conventional) research, but can be "translated" into terms that are useful for naturalistic inquiry. For naturalistic inquiry to be a valid approach, there must be a common thread to link it with rationalistic research, and the following trustworthiness table (Figure 6) establishes such a connection.

The trustworthiness table, as reported by Guba, shows the relationship of the four aspects of trustworthiness, which are in the first column. The second column shows the scientific (conventional) term, and, finally, the third column shows the naturalistic term. This arrangement is useful for determining the priority of paradigms within each cell. Thus the relevancy of the third judgment is established and facilitated.

Scientific and Naturalistic Terms Appropriate
to the Four Aspects of Trustworthiness*

ASPECT	SCIENTIFIC TERM	NATURALISTIC TERM
Truth Value	Internal Validity	Credibility
Applicability	External Validity Generalizability	Transferability
Consistency	Reliability	Dependability
Neutrality	Objectivity	Confirmability

Figure 6. Naturalistic terms form the basis to identify and to evaluate paradigms in the literature of vocational education.

* Guba, 1981. In recent writings by Guba, the term Scientific has been replaced with the term Conventional; and, in some earlier instances, Guba used the term Rationalistic.

In the aspect of "truth value," this research is concerned with testing the credibility of findings with data from members of relevant human data source groups. "Applicability" in this research is concerned with findings that may be transferred from one context to another and making the maximum use of the "best fit" concept. Because of the multiple and real alternatives, "consistency" is interpreted as dependability with variances that can be traced to its source. "Neutrality" must be assured; to do this, the data must exhibit confirmability of the data produced in light of the multiple realities and multiple value systems.

Concept of Relevance

Perhaps the most important concept in this research is the level of relevance of a literature citation. Relevance is vital to both the framework of the matrix and to the contribution each literature citation makes to the body of knowledge. These are not separable, for together they form the essential tool to begin to address which literature citations are paradigms.

Literature reported over a good number of years and having been generated by various sources, for numerous reasons, cannot be evaluated in a paradigmatic approach through quantitative analyses. The naturalistic approach exercises judgments and, more specifically, relies on the researchers themselves rather than on objective instruments.

Identification and Evaluation Instrument

The purpose of this research is to identify and ultimately exhibit selected sources of reference (or literature citations) for vocational education. To do this, the literature of vocational

education must be identified and evaluated with selected pieces identified as works that merit recognition as paradigms in the literature. An instrument (Figure 5) was developed to accomplish this goal. The initial draft of the instrument, which has not been field tested, was presented in Figure 5. It is entitled Identification and Evaluation of Paradigms in Vocational Education Literature. The discussion below concerning the three judgments refers to Figure 5.

Three judgments must be made by the evaluator:

1. evaluate the literature citation as a paradigm in vocational education literature,
2. determine at which intersection point (Practices and Foundations) the "best fit" for the literature citation exists, and
3. prioritize the list of literature citations at each point of intersection.

Judgment No. 1 requires the evaluator to follow a simple flowchart to determine if, in fact, the literature cited is a paradigm in the literature. If it is not, there is no need to continue to judgments two and three. If it is, however, the evaluator exercises judgments two and three.

In Judgment No. 2, the evaluator ranks the literature citation for the "best fit." A literature citation can be placed into more than one cell; however, the literature citation must take a lower priority order in the second or subsequent cell or cells. Such a procedure would show interaction among literature cited in more than one cell category.

In Judgment No. 3, the evaluator prioritizes the literature citation by ranking the importance of the literature citation. Some

statements serve as a cross-check on the procedures followed in Judgment No. 1. That is, trustworthiness (credibility, transferability, dependability, and confirmability) are validated through Judgment No. 3 statements.

Statements 3, 4, 7, 11, and 16 cross validate the responses in Judgment No. 1. These statements must be rated as "5s". A composite score of statements one through 20 will result in a score that will be used to prioritize the literature citation in each cell.

Section VI: Literature Search Strategies

Manual Search Strategy

The phrase manual search strategy refers to locating literature citations that are not included in computerized data bases such as ERIC (Appendix B). The following flowchart (Figure 7) illustrates the steps involved in such a search strategy. To fully understand this flowchart, some terms need to be defined: topic is defined as a vocational education area about which the reader is interested in knowing more; source is defined as a supplier of literature citations other than electronic data bases; and literature citation is defined as an article, reading, study, or piece having significance to vocational education.

These steps summarize what is involved in manually searching vocational education literature and subsequently classifying the literature citations into practices and foundations.

1. Select a vocational education topic to be investigated.

2. Select a source from those listed in the flowchart and search for literature citations.

3. Locate a specific literature citation from the source selected.

4. Complete Judgment No. 1.

5. Decide if the literature citation is a paradigm.

   If yes, go to step 6a.
   If no, go to step 6b.

6. a. Complete Judgment Nos. 2 and 3, then go to step 7a.

b. Ask yourself if there is additional information from this source.

If yes, go back to step 4.
If no, go to step 7b.

7. a. Submit the literature citation to the researchers as a proven paradigm, then go back to step 6b.

b. Ask yourself if all sources have been reviewed.

If yes, go back to step 1.

If no, go back to step 2.

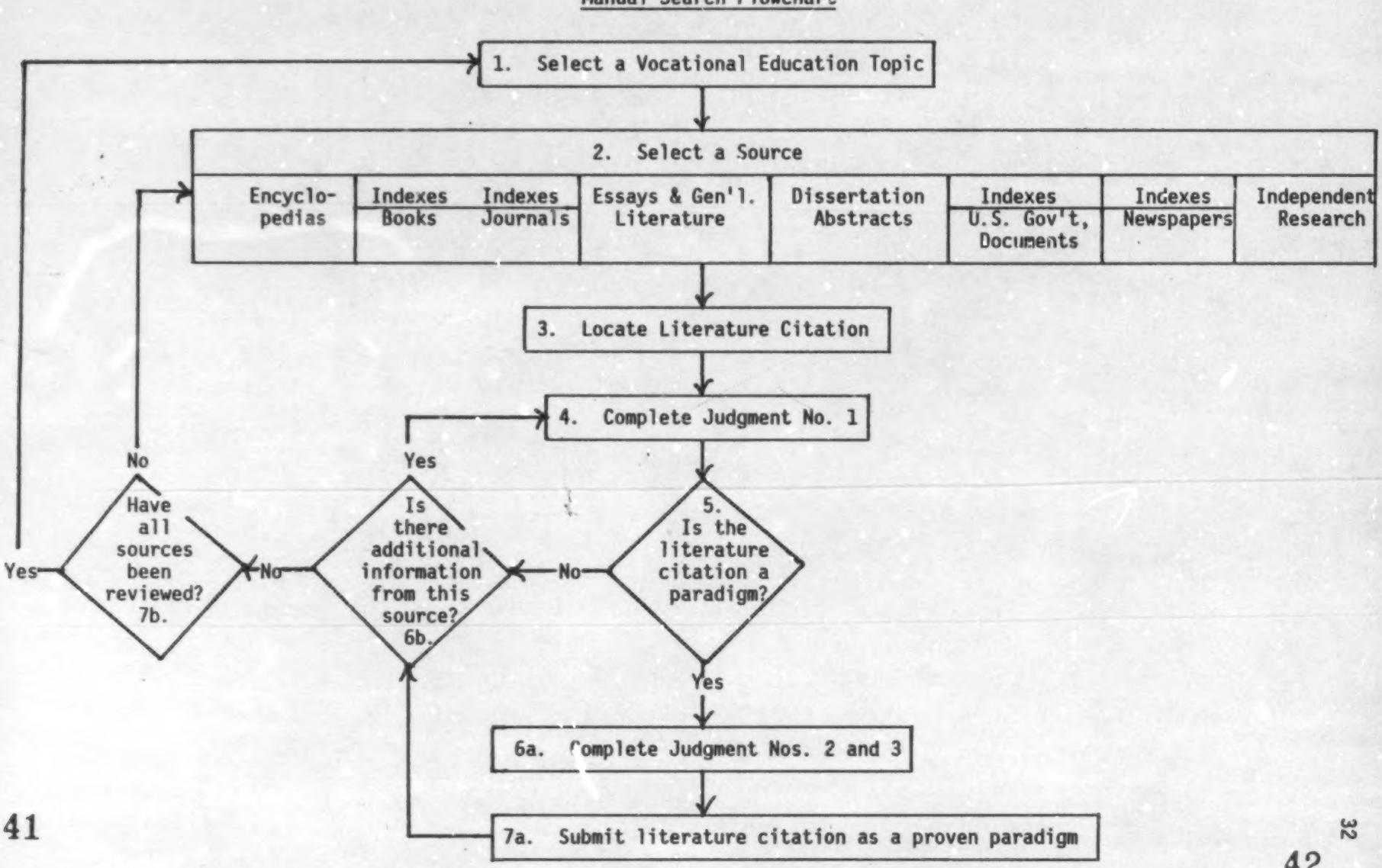

Figure 7: A flowchart of the manual process used to search literature.

Electronic Search Strategy

The phrase electronic search strategy refers to locating literature through the use of an electronic data base, such as ERIC. Appendix B contains a comprehensive listing of selected electronic data bases that are important to this research project. The following flowchart (Figure 8) illustrates the steps involved in such a search strategy. To fully understand this flowchart, the following terms need to be defined: topic is defined as a vocational education area about which the reader is interested in knowing more; source is defined as an electronic data base which is a supplier of literature citations; thesaurus descriptors are terminology that is appropriate to the particular data base being searched, as provided in thesauri and vocabulary guides that accompany the data base; and literature citation is defined as an article, reading, study, or piece having significance to vocational education.

These steps summarize what is involved in electronically searching vocational education literature and subsequently classifying the literature citations into practices and foundations.

1. Select a vocational education topic to be investigated.
2. Select an electronic data base source (Appendix B).
3. Determine the appropriate descriptors for the particular source being searched.
4. Conduct the actual computer search by entering the descriptors intc the computer.
5. Read the output of the computer search.
6. Complete Judgment No. 1.

7. Decide if the literature citation is a paradigm.

   If yes, go to step 8a.
   If no, go to step 8b.

8. a. Complete Judgments Nos. 2 and 3, then go to step 9a.

   b. Determine whether or not there is additional information from this source.

      If yes, go back to step 6.
      If no, go to step 9b.

9. a. Submit the literature citation to the researchers as a proven paradigm, then go back to step 8b.

   b. Ask yourself if all sources have been reviewed.

      If yes, go back to step 1.
      If no, go back to step 2.

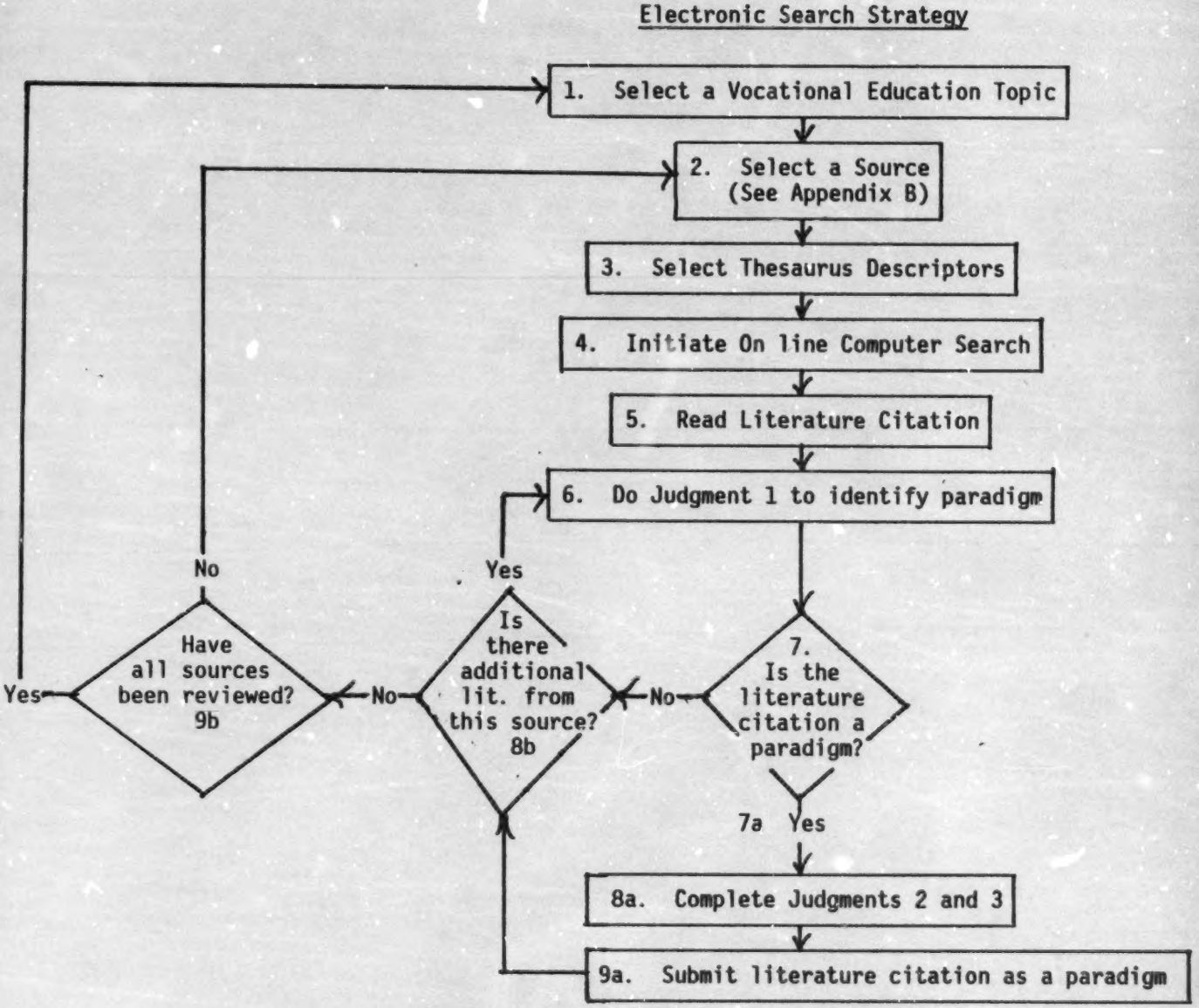
Electronic Search Strategy
1. Select a Vocational Education Topic
2. Select a Source (See Appendix B)
3. Select Thesaurus Descriptors
4. Initiate On line Computer Search
5. Read Literature Citation
6. Do Judgment 1 to identify paradigm
7. Is the literature citation a paradigm?
7a Yes
No
8a. Complete Judgments 2 and 3
Is there additional lit. from this source? 8b
Yes
No
9a. Submit literature citation as a paradigm
Have all sources been reviewed? 9b
No
Yes

Figure 8: A Flowchart of the electronic process used to search literature.

APPENDIX A

APPENDIX A

ORGANIZATION OF TOPICS AND MATERIALS IN PHILOSOPHY OF EDUCATION[1]

TYPES OF EDUCATIONAL PROBLEMS	SOURCES OF PHILOSOPHICAL MATERIALS							
	Epistemology	Metaphysics	Ethics, Value Theory	Aesthetics	Logic, Semantics, Language	Philosophy of Science	Man & Society	Philosophy of Religion
Philosophy	P1	P2	P3	P4	P5	P6	P7	P8
Nature & Aims of Education	A1	A2	A3	A4	A5	A6	A7	A8
Curriculum Design & Validation	B1	B2	B3	B4	B5	B6	B7	B8
Organization & Policy	C1	C2	C3	C4	C5	C6	C7	C8
Teaching-Learning	D1	D2	D3	D4	D5	D6	D7	D8
Education Research & "The Science of Education"						E6		
Nature of Philosophy of Education & Philosophy of Education in Teacher Education						FI and FII		
Index of Topics						G		
History of Education Thought						H		

[1] Broudy, Harry S. and others. Philosophy of Education: An Organization of Topics and Selected Sources. (Urbana: University of Illinois Press, 1967).

APPENDIX B

LISTING OF SELECTED ELECTRONIC DATA BASES IN VOCATIONAL EDUCATION

AG ECON--Agricultural Economics (1970 to present)

Agricultural Engineering Abstracts (1979 to present)

AGREP--Agriculutural Research Projects in the European Community (1975 to present)

AGRICOLA--Agricultural OnLine Access (1970 to present)

AGRIS--Agricultural Information System for Agricultural Sciences and Technology (1975 to present)

AMI--Advertising and Marketing Intelligence (1979 to present)

CDI--Comprehensive Dissertation Index (1861 to present)

CIJE--Current Index to Journals in Education (1969 to present)

CIS/Index--Congressional Information Service/Index to Congressional Publications and Public Laws

CRIS--Current Research Information System (Active research and projects terminated for less than two years)

ECONOMICS ABSTRACTS INTERNATIONAL (1974 to present)

EDUC--Education Research (Ontario--1960 to present)

ERIC--Educational Resources Information Center (1966 to present)

FSTA--Food Science and Technology Abstracts (1969 to present)

HEALTH--Health Planning and Administration (1975 to present)

ITTD--(IRE-ITTD)--Information and Technology Transfer Database

Journal of Economic Literature--(1969 to present)

NIOSHTIC--National Institute for Occupational Safety and Health Technical Information Center

NTIS--Bibliographic Data Base--National Technical Information Service Bibliographic Data Base (1964 to present)

PASCAL--(1972 to present)

PROMT--Predicasts Overview of Markets and Technology (1972 to present)

PTS Indexes--Predicasts Indexes (1972 to present)

RESHUS--Human Sciences of Health (1977 to present)

RIVE--Resources in Vocational Education (1967 to present)

RIE--RESEARCH IN EDUCATION

TRADE AND INDUSTRY INDEX (1981 to present)

SELECTED REFERENCES

Barlow, Melvin L. The Fabulous History of Vocational Education. Knoxville, TN: Omicron Tau Theta, Alpha Chapter, The University of Tennessee, April, 1984.

Broudy, Harry S. Building a Philosophy of Education, Second Edition. Englewood Cliffs, NJ: Prentice-Hall, Inc., 1961.

Broudy, Harry S. and others. Philosophy of Education: An Organization of Topics and Selected Sources, Urbana, IL: University of Illinois Press, 1967.

Guba, Egon G. "Criteria for Assessing the Trustworthiness of Naturalistic Inquiries." Educational Communication and Technology Journal, 29, 1981, 75-92.

Guba, Egon G. and Lincoln, Yvonna S. Effective Evaluation. San Francisco, CA: Jossey-Bass Publications, 1981.

Guba, Egon G., and Lincoln, Yvonna S. "Epistemological and Methodological Bases of Naturalistic Inquiry." Educational Communication and Technology Journal, 30, 1982, 233-52.

Ornstein, Robert E. (Ed.) The Nature of Human Consciousness, A Book of Readings. The Viking Press, New York, 1974.

Shulman, Lee S. "Disciplines of Inquiry in Education: An Overview." Educational Researcher. June-July, 1981, pp. 5-12, 23.